

## REMARKS

Claims 1-3, 8, 11, 12, 14, 15 and 17-28 are pending in the present application.

Claims 1, 17, 18, 20, 21, 22, 26, and 27 are amended to further define wherein the composition comprises an impurity containing hydroxy-containing basic zinc carbonate. Support for the amendment is found in the specification at page 5, lines 19-21 -- The idealized stoichiometry is represented by  $\text{Zn}_5(\text{OH})_6(\text{CO}_3)_2$  but the actual stoichiometric ratios can vary slightly and other impurities may be incorporated in the crystal lattice. --

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

### Rejections Under 35 USC §103(a) Over Bhat et al. (WO 96/25913) in view of Gavin et al (WO01/00151)

Claims 1-3, 8, 11, 12, 14, 15 and 17-28 have been rejected under 35 USC §103(a) as being unpatentable over Bhat et al. (WO 96/25913) in view of Gavin et al (WO01/00151). Applicants respectfully traverse this rejection.

The Office Action asserts Bhat et al. teaches compositions comprising monophasic zinc hydroxycarbonate as antimicrobial agent in personal care products, such as shampoos, wherein there is a synergistic action of zinc hydroxycarbonate with detergent and/or anti-dandruff actives like zinc pyrithione in shampoos/hair dressings. The Office Action thus asserts that the art has already established compositions comprising zinc hydroxycarbonate and zinc pyrithione in personal care products.

The Office Action further asserts that the difference between the instant application and Bhat et al. is that Bhat et al. do not expressly teach the amount of zinc pyrithione present, the various 'augmentation factors'; or gallery ions in the zinc containing layered material. The Office Action asserts that this deficiency in Bhat et al. is cured by the teachings of Gavin et al. The Office Action further asserts that the difference between the

instant application and Bhat et al. is that Bhat et al. do not expressly teach a methods for preparing a personal care composition by reacting n a personal care composition comprising zinc pyrithione a carbonate or bicarbonate with a zinc compound, wherein the molar ratio is between about 1:10 and about 10:1; and wherein the zinc pyrithione and the basic zinc carbonate are simultaneously or step wise generated. The Office Action asserts that this deficiency in Bhat et al. is cured by the teachings of Gavin et al. The Office Action further asserts the difference between the instant applications and Bhat et al. is that Bhat et al. do not expressly teach a method of treating microbial or fungal infections. The Office Action asserts that this deficiency is cured by the teachings of Gavin et al. Applicants respectfully traverse these assertions.

Bhat et al. in WO 96/25913 describes the preparation and use of a material termed “monophonic zinc hydroxycarbonate.” As described by Bhat et al., hydrozincite (naturally occurring) and basic zinc carbonate are equivalent names for zinc hydroxycarbonate (Page 1, lines 23-24 and line 35). The term “monophasic” is defined (Page 1, lines 29-33) as “without any other impurity phases ... present ...”.

The claimed invention, as now amended, requires from about 0.001 weight% to about 10 weight%, based on the total weight of the composition, of an impurity containing hydroxy-containing basic zinc carbonate. Thus, the claimed invention, does not comprise a monophasic, or “without any other impurity phases” zinc hydroxycarbonate as defined by Bhat et al.

Applicants submit a Declartion under 37 CFR 1.132 from James R. Schwartz in support against the present Office Action assertions. Within the field of x-ray diffraction of crystal structures, “monophasic” means that only a single material is identifiable by its x-ray diffraction pattern. For example, a representative article in the field describes the synthesis of a monophasic solid  $\text{Ce}_{0.5}\text{Zr}_{0.5}\text{O}_2$  verified by observing only the peaks in the diffraction pattern associated with this material ((J Mater Sci (2207) 42:3557-3563); Page 3560; attached with the 1.132 Declaration). When different preparative conditions are used, multiple phases are observed to be present in the diffraction spectra (Page 3561).

The 1.132 Declaration provides X-ray diffraction data generated for various sources of basic zinc carbonate materials. The most effective basic zinc carbonate materials of the claimed invention (e.g., from Bruggemann) are composed of *more than one phase* (i.e., is not monophasic) as evidenced by additional peaks (highlighted in yellow) beyond those that represent pure basic zinc carbonate, demonstrated below as Hydrozincite. (Table 1). When using X-ray diffraction to compare different commercial sources of basic zinc carbonate, i.e. Bruggemann, Elementis, and Cater, some appear primarily monophasic while others do not. While the sample in Table 2 from Bruggemann is multi-phasic as evidenced by additional peaks highlighted in yellow, the samples from Cater and Elementis show less evidence of this (noting also the broader peaks in the Bruggemann spectrum – another indication of multi-phasic nature).

Further, these difference of monophasic vs. multi-phasic are important to the behavior of basic zinc carbonate, as the higher purity materials (closer to monophasic) have lower relative zinc lability, as demonstrated in Table 3. This data demonstrates that Bruggemann-type basic zinc carbonate materials are not monophasic and that this is an important attribute of the claimed invention to achieve high performance. Thus, the Office Action assertion that Bhat et al. discloses the same formula for basic zinc carbonate as disclosed by Applicants and would intrinsically possess the same properties is incorrect. A monophasic basic zinc carbonate, such as those from Elementis and Cater, do not possess the same activity as a multi-phasic or impurity containing basic zinc carbonate, as evidenced by the supporting data in the 1.132 Declaration.

There is no motivation to combine the teaching of Bhat et al. with Gavin et al. and arrive at the claimed invention, as neither Bhat et al. nor Gavin et al. disclose an impurity containing hydroxy-containing basic zinc carbonate. Accordingly, the rejection is untenable and should be withdrawn.

It is noted in passing that claims had been previously rejected over Gavin et al. in view of Bhat et al. That rejection was withdrawn by virtue of the Office Action mailed March 4, 2009. Now the claims have been rejected over Bhat et al. in view of Gavin et al. This new rejection appears misplaced in view of the earlier withdrawal of the claim rejection over identical art.

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**Allowable Claims**

In view of the above amendments and remarks, and the accompanying Declaration under 37 CFR 1.132, the instant claims are respectfully believed to be in a condition for allowance. Accordingly, a Notice of Allowance is respectfully requested.

**Conclusion**

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-3, 8, 11, 12, 14, 15 and 17-28 is requested.

Respectfully submitted,  
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